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# **ACC-4162-0/ ACC-4163-0 Accessory User Manual**

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# PXle-416x Open-Sense Protection Accessory

This document explains how to install and use the following PXle-416x Open-Sense Protection Accessory with a PXle-4162/PXle-4163 source measure unit (SMU):

Accessory Model	Accessory Part number	SMU Model
ACC-4162-0	787719-01	PXle-4162
ACC-4163-0	787720-01	PXle-4163

The ACC-416x-0 accessory is used to modify the behavior of the PXle-416x SMUs when the module is used in remote sense mode. This document also includes ACC-416x-0 accessory specifications.

Read this document before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards. Visit [ni.com/manuals](https://ni.com/manuals) for more information about your product, including specifications, pinouts, and instructions for connecting, installing, and configuring your system.



**Caution** Observe all instructions and cautions in the user documentation. Using the product in a manner not specified can damage the product and compromise the built-in safety protection.



**Attention** Suivez toutes les instructions et respectez toutes les mises en garde de la documentation d'utilisation. L'utilisation du produit de toute autre façon que celle spécifiée risque de l'endommager et de compromettre la protection de sécurité intégrée.



**Notice** This device is intended for use only with the PXle-4162/PXle-4163 SMU. For more information about the PXle-4162/PXle-4163, refer to [ni.com/manuals](https://ni.com/manuals).

## Icons



**Notice** Take precautions to avoid data loss, loss of signal integrity, degradation of performance, or damage to the model.



**Caution** Take precautions to avoid injury. Consult the model documentation for cautionary statements when you see this icon printed on the model. Cautionary statements are localized into French for compliance with Canadian requirements.

## Kit Contents and Other Equipment

An assembled ACC-416x-0 accessory is included in your kit.

In addition, you need the following items to install and use the accessory:

- PXIe-4162/PXIe-4163<sup>1</sup>
- Number 1 Phillips-head screwdriver

Visit [ni.com](https://ni.com) for more information about the PXIe-4162/PXIe-4163.

## Installing the Accessory

Complete the following steps to install the ACC-416x-0 accessory with a PXIe-416x.

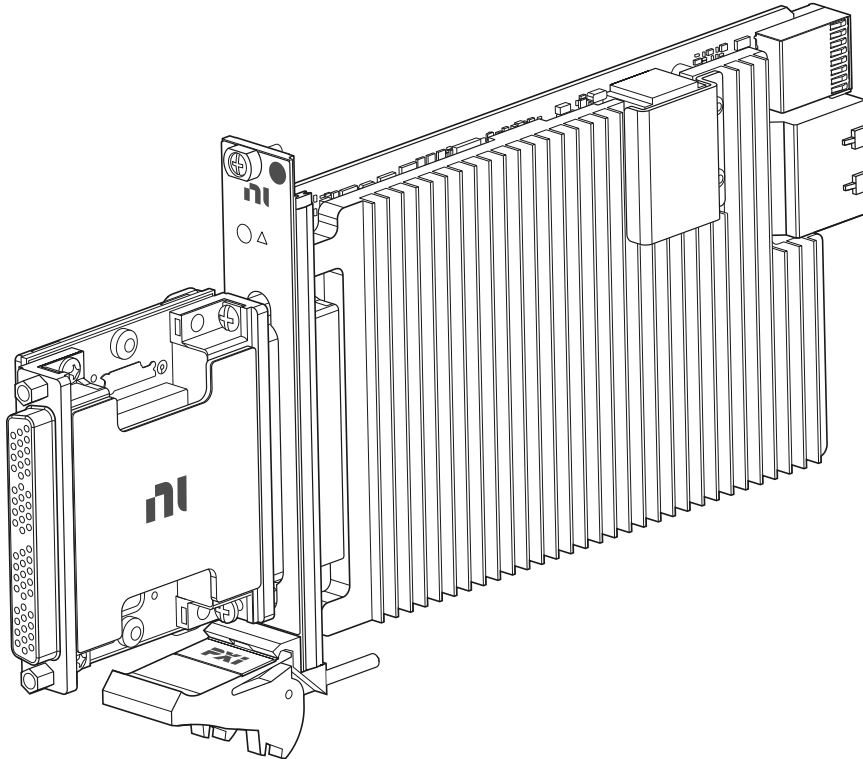
Before you begin, install the PXIe-416x in a chassis and ensure that all signals are disconnected from the PXIe-416x if you have not already done so. Refer to the getting started guide for your module at [ni.com/manuals](https://ni.com/manuals) for installation instructions.

1. If you use the ACC-416x-0 accessory with a PXIe-4162/PXIe-4163, refer to your module specifications at [ni.com/manuals](https://ni.com/manuals) for

pinout and signal information during installation.

1. Connect the ACC-416x-0 accessory to the PXIe-416x.
  - a. Align the male D-SUB connector on the ACC-416x-0 accessory and the female D-SUB connector on the front of the PXIe-416x and attach.
  - b. Tighten the screws on the front of the ACC-416x-0 accessory until the accessory is secured to the PXIe-416x.

**Figure 1.** ACC-416x-0 accessory connected to a PXIe-416x SMU



2. Connect a compatible cable or connectivity accessory to the ACC-416x-0 accessory. Refer to your cable or accessory documentation for more information.

Refer to the following pinouts for your respective module to make the appropriate connections for your application.

Figure 2. PXle-4162 Pinout

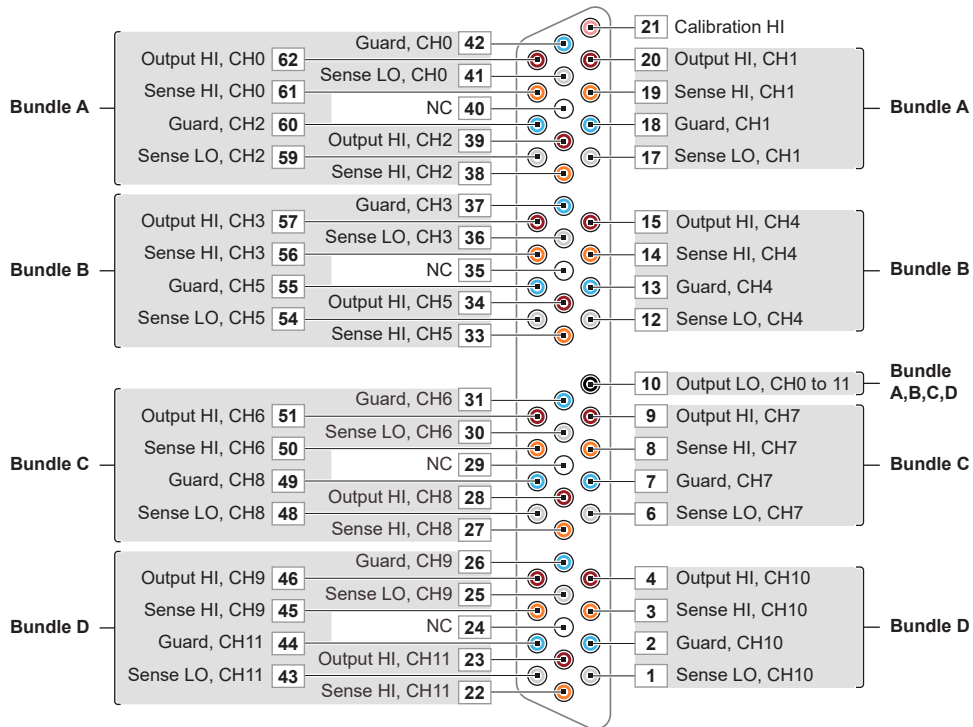
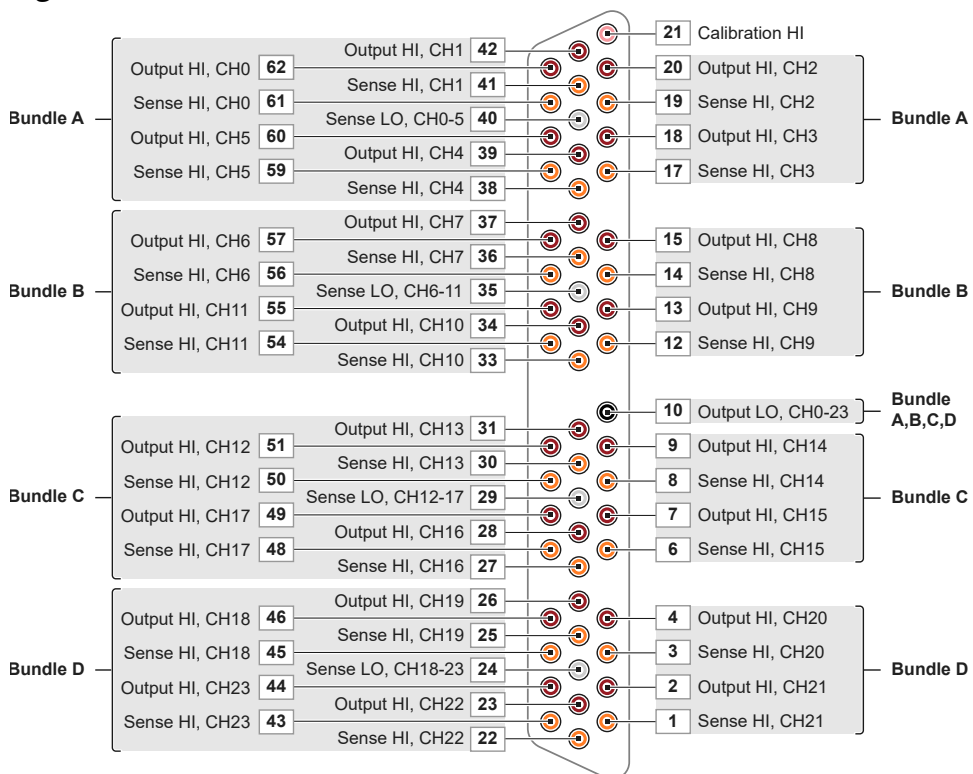


Figure 3. PXle-4163 Pinout



## Uninstalling the Accessory

1. Disconnect any attached cable or connectivity accessory from the ACC-416x-0 accessory.
2. Loosen the screws on the front of the ACC-416x-0 accessory and detach the accessory from the front of the PXIe-416x.

## Accessory Specifications

These specifications apply to the ACC-416x-0 accessory for use with the PXIe-4162/PXIe-4163 SMU.

- The PXIe-4162 is a 12-Channel,  $\pm 24$  V, 100 mA SMU
- The PXIe-4163 is a 24-Channel,  $\pm 24$  V, 50 mA SMU

For complete device specifications, refer to the PXIe-4162/PXIe-4163 specifications available at [ni.com/manuals](http://ni.com/manuals).

## Definitions

**Warranted** specifications describe the performance of a model under stated operating conditions and are covered by the model warranty.

**Characteristics** describe values that are relevant to the use of the model under stated operating conditions but are not covered by the model warranty.

- **Typical** specifications describe the performance met by a majority of models.
- **Nominal** specifications describe an attribute that is based on design, conformance testing, or supplemental testing.

Specifications are **Nominal** unless otherwise noted.

## Derating

### Remote Sense

Maximum sense lead	100 $\Omega$
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resistance	
Maximum force lead drop	1 V
Voltage accuracy	Add 200 $\mu$ V to the accuracy specification for your respective module when using the ACC-416x-0 accessory.


Load Regulation

Voltage	Add 300 $\mu$ V/mA to the accuracy specification for your respective module at the output connector pins of the connected ACC-416x-0 accessory when using local sense configuration.
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Physical

Dimensions	75 mm x 81 mm x 19 mm (3.0 in. x 3.2 in. x 0.7 in.)
Weight	89 g (3.15 oz)

Environmental Guidelines

 **Notice** This model is intended for use in indoor applications only.

Environmental Characteristics

Temperature and Humidity



<b>Temperature</b>	
<b>Operating</b>	
Chassis with slot cooling capacity $\geq 58 \text{ W}^2$	0 °C to 55 °C
All other compatible chassis	0 °C to 40 °C
<b>Storage</b>	-40 °C to 71 °C
<b>Humidity</b>	
Operating	10% to 90%, noncondensing
Storage	5% to 95%, noncondensing
Pollution Degree	2
Maximum altitude	2,000 m (800 mbar) (at 25 °C ambient temperature)

## Compliance and Standards

### Environmental Management


NI is committed to designing and manufacturing products in an environmentally responsible manner. NI recognizes that eliminating certain hazardous substances from our products is beneficial to the environment and to NI customers.

For additional environmental information, refer to the ***Engineering a Healthy Planet*** web page at [ni.com/environment](https://ni.com/environment). This page contains the environmental regulations and directives with which NI complies, as well as other environmental


2. Not all chassis with slot cooling capacity  $\geq 58 \text{ W}$  can achieve this ambient temperature range. Refer to PXI chassis specifications to determine the ambient temperature ranges your chassis can achieve.

information not included in this document.

#### EU and UK Customers

-  **Waste Electrical and Electronic Equipment (WEEE)**—At the end of the product life cycle, all NI products must be disposed of according to local laws and regulations. For more information about how to recycle NI products in your region, visit [ni.com/environment/weee](https://ni.com/environment/weee).

#### 电子信息产品污染控制管理办法（中国RoHS）

-  **中国RoHS**—NI符合中国电子信息产品中限制使用某些有害物质指令 (RoHS)。关于NI中国RoHS合规性信息，请登录 [ni.com/environment/rohs\\_china](https://ni.com/environment/rohs_china)。(For information about China RoHS compliance, go to [ni.com/environment/rohs\\_china](https://ni.com/environment/rohs_china).)

#### CE Compliance

This product meets the essential requirements of applicable European Directives, as follows:

- 2011/65/EU; Restriction of Hazardous Substances (RoHS)

#### Export Compliance

This product is subject to control under the U.S. Export Administration Regulations (15 CFR Part 730 et. seq.) administered by the U.S. Department of Commerce's Bureau of Industry and Security (BIS) ([www.bis.doc.gov](https://www.bis.doc.gov)) and other applicable U.S. export control laws and sanctions regulations. This product may also be subject to additional license requirements of other countries' regulations.

Additionally, this product may also require export licensing before being returned to NI. The issuance of a Return Material Authorization (RMA) by NI does not constitute export authorization. The user must comply with all applicable export laws prior to exporting or re-exporting this product. See [ni.com/legal/export-compliance](https://ni.com/legal/export-compliance) for more information and to request relevant import classification codes (e.g. HTS), export classification codes (e.g. ECCN), and other import/export data.

## Product Certifications and Declarations

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for NI products, visit [ni.com/product-certifications](https://ni.com/product-certifications), search by model number, and click the appropriate link.

## Additional Resources

Visit [ni.com/manuals](https://ni.com/manuals) for information about the PXIe-4162/PXIe-4163 and the following resources:

- The getting started guide for your module:
  - ***PXIe-4162 Getting Started Guide***
  - ***PXIe-4163 Getting Started Guide***
- The specifications for your module:
  - ***PXIe-4162 Specifications***
  - ***PXIe-4163 Specifications***
- ***NI DC Power Supplies and SMUs Help***
- ***PXIe-4162/4163 Calibration Procedure***
- The safety, environmental, and regulatory information for your module:
  - ***PXIe-4162 Safety, Environmental, and Regulatory Information***
  - ***PXIe-4163 Safety, Environmental, and Regulatory Information***

## NI Services

Visit [ni.com/support](https://ni.com/support) to find support resources including documentation, downloads, and troubleshooting and application development self-help such as tutorials and examples.

Visit [ni.com/services](https://ni.com/services) to learn about NI service offerings such as calibration options, repair, and replacement.

Visit [ni.com/register](https://ni.com/register) to register your NI product. Product registration facilitates technical support and ensures that you receive important information updates from

NI.

NI corporate headquarters is located at 11500 N Mopac Expwy, Austin, TX, 78759-3504, USA.